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(54) **Spacer Covering for Contact-Free Protection of Wounds**

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Spacer Covering for Contact-Free Protection of Wounds

The invention concerns a spacer covering for the contact-free protection of wounds.

As is known, sticky attachment between the wound and the overlying material frequently occurs for the known adhesive plasters and bandages as a result of contact with the wound. In order to treat the wound, then, it is often necessary to remove the material sticking to the wound, and this interferes with the healing process and delays the healing.

The invention is based on the object of creating a spacer covering for contactless protection of wounds, through the use of which a sticking of the bandage or plaster material to the wound and thus also an impairment of wound healing due to the more or less frequent detachment of the sticky attachment is prevented. In addition to this, a spacer covering will be created for wound treatment that prevents the pain suffered by the patient due to the detachment of adhesive plasters and bandages. Also, a spacer covering will be created for wound treatment that reduces the work load of care-giving personnel. Additional advantages ensue from the following description.

This object is solved by a spacer covering that is characterized in accordance with the invention by an at least partially dimensionally stable shell body that is outwardly

arched from the wound on one side and is constructed in the edge region for support on an area of the body surface. This shell body is laid over the wound with the arch outward, so that the wound is spanned by it. The shell body, which is affixed by a bandage, an adhesive plaster, or another means, keeps the wound free of contact by adhesive plasters and bandages and thus prevents a sticking to the respective bandage or plaster materials. The pressure exerted by the bandage or the adhesive plaster or another fixing material is not transmitted to the wound, but instead is transmitted to the body surface adjacent to the wound. The wound is thereby protected against impact. It is also no longer possible for the patient to rub or scratch the wound. These advantages afford a more rapid healing process and simplify wound treatment.

In the preferred embodiment of the spacer covering of the invention, at least one opening is constructed in the shell body. Moisture, particularly vapors produced from oozing wounds, can escape to the outside through this opening. In addition, the wound can be treated through the opening(s) without the necessity of removing the shell body. Preferably, the at-least one opening is provided with a cover, which can be linked to the shell body. The opening(s) can be closed by the cover, so that the wound is protected against contaminants, even though it need not be covered directly by a bandage, an adhesive plaster, or the like.

In another embodiment, the shell body can be at least partially porous. The porous shell body also permits the exchange of gas and vapor with the atmosphere, so that moisture does not accumulate underneath the shell. The at-least partially porous shell body can, moreover, also have an opening, with or without a cover, for wound treatment. The porous shell body can consist, for example, of a dimensionally stable,

press-molded fibrous material, such as, for example, a porous cellulosic mass.

In the preferred embodiment of the spacer covering in accordance with the invention, the shell body is constructed in a dimensionally stable manner in its central, outwardly arched region and in a flexible manner in the edge region provided for support on the surface of the body. On account of its flexibility, the edge region can adjust to the unevenness of the body surface, thus avoiding an unpleasant pressure at the support sites, which is produced in the case of a totally rigid shell. The flexibility in the edge region can be achieved, for example, by a reduced thickness of the shell material or by a higher content of plasticizer in the shell material, which consists of plastic. The dimensional stability in the central region must be sufficient to preserve the distance of the shell from the wound when pressure is applied, for example, by winding of the bandage.

Preferably, the shell body bears an adhesive layer covered with a peelable protective film in the edge region on the side provided for support on the body surface. The spacer covering of the invention can therefore be affixed directly on the body surface without additional auxiliaries, such as, for example, an adhesive plaster or bandage, once the protective film has been peeled off. It is also possible to dispense with the adhesive layer and to arrange the shell body under, for example, a bandage, if adhesive affixing to the skin is not desired.

Advantageously, the shell body consists of a plastic, particularly a skin-compatible plastic. The shell body can be transparent, so that the wound can be examined without opening or removing the shell body.

The shell body, particularly its cover, can bear on its inner side a repository material held at a distance from the wound.

The repository material can be an absorbent material, such as, for example, a pledget, a gauze compress, foam, or the like, that is affixed to the shell or to its cover and that can take up a medication that promotes the healing process, without a direct contact with the wound being necessary for this.

In a further embodiment of the spacer covering of the invention, the shell body, inclusive of its edge region, is dimensionally stable and the edge region is provided with a soft layer on the side facing the body surface. This soft layer can lie on the body surface, particularly on the body curvature. The layer can have a thickness of several mm to 2 cm or more and is naturally thicker for large shell bodies than for small shell bodies.

Preferably, the soft layer is made of foam rubber, hollow profile rubber, or nonwoven material. The foam rubber is preferably open-pored, so that an exchange of moisture with the atmosphere is possible through the layer.

Advantageously, the soft layer bears an adhesive layer covered with a peelable protective foil on the side intended for support on the body surface.

In a further embodiment, one or several parallel incisions or predetermined tearing points are formed in the shell body outside of the edge region. These incisions go from edge region to edge region and make possible the arching of the shell and its adaptation to the curved body surface. Advantageously, for an oblong shell body, the incisions or predetermined tearing points are situated transversely to its lengthwise axis.

The invention will be described in more detail on the basis of the drawing.

Shown therein is the following:

Figure 1 shows a first embodiment, in lengthwise section, of the spacer covering under a bandage for protecting a wound;

Figure 2 shows a plan view of the spacer covering of Figure 1 without the outer bandage;

Figure 3 shows a second embodiment of the spacer covering in lengthwise section;

Figure 4 shows a third embodiment, in lengthwise section, of the spacer covering similar to that of Figure 1;

Figure 5 shows a fourth embodiment of the spacer covering with a soft layer on the bottom side;

Figure 6 is a side view of a fifth embodiment of the spacer covering; and

Figure 7 is the plan view of the embodiment shown in Figure 6.

According to Figures 1 and 2, arranged on a body part 1 with a wound 2 is a spacer covering 3, distanced on all sides from the wound 2. On its outer side lying opposite the wound 2, the covering 3 has four holes 4, which make possible the exchange of air and moisture between the interior 5 of the covering and the external atmosphere. The shell body 3 has a relatively flexible flange-shaped edge 3^a and the outwardly arched, dimensionally stable spacer part 3^b. The shell body 3 is held on the body surface 1 by a bandage 6, which is represented in Figure 1 only in part and in Figure 2 not at all. It is evident that, for this embodiment, the wound 2 is kept free of any contact with a bandage, an adhesive plaster, or the like, so that also no sticking to the wound, with the resulting drawbacks in treatment and healing, is possible.

The embodiment shown in Figure 3 differs from the embodiment according to Figures 1 and 2 in that, for one thing, the outer part 3^b of the spacer shell, which is rigid toward bending, has only one larger opening 4, which can be closed by a cover 3^d linked at 3^c. The cover 3^d bears on its inner side a repository material 7, which serves, for example, as a repository for a medication being used in wound treatment, such as, for example, a disinfectant.

In this embodiment, the flange-shaped edge 3^a is provided with an adhesive layer 8 on the side that is supported on the body surface, so that the spacer covering can be affixed on the body surface without a further helping means, such as, for example, a bandage or an adhesive plaster. When the cover 3^d is opened, as represented by dotted lines in Figure 3, a medication can be applied to the wound. In addition, the repository material 7 can be loaded with medications, which, after the opening has been closed, can act over a prolonged period of time on the wound 2.

The embodiment shown in Figure 4, like the embodiment according to Figures 1 and 2, has several openings 4 in the dimensionally stable shell part 3^b for the exchange of moisture and air between the interior space 5 and the surrounding atmosphere. In the interior space 5 is placed a gauze pad 9, which has essentially the same function as the repository material 7 shown in Figure 3. Owing to the dimensional stability of the shell part 3^b, the gauze pad 9 can be inserted into the shell without it coming into contact with the wound.

The spacer covering of the invention makes it possible to achieve a simplification of wound treatment, particularly for oozing wounds, and an acceleration of healing. The wound is better protected against impact than by a bandage alone. In the case of a transparent covering, the healing can be monitored without opening it or removing it.

The size of the covering can differ widely, depending on the wound. Its covering surface can lie in the range of 1 to 1000 cm², its height in the range of 0.5 to 15 cm.

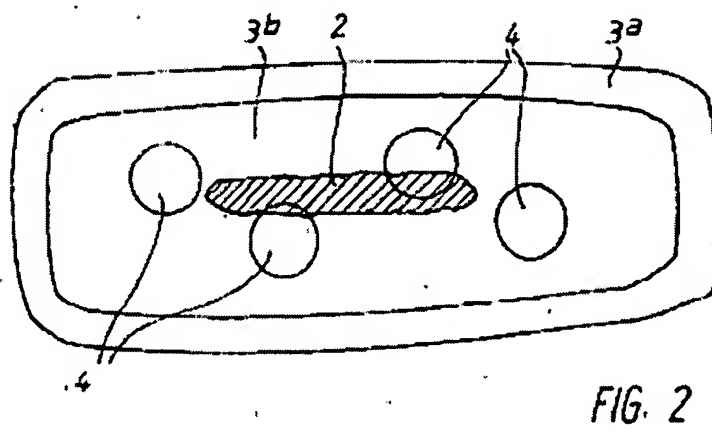
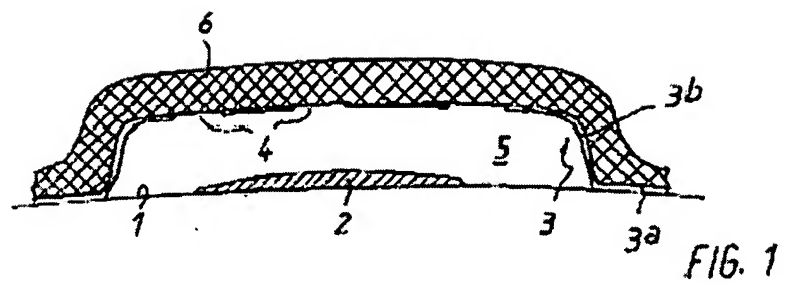
In the embodiment of the shell body 3 shown in Figure 5, the flange-like edge regions 3^a are lined on the bottom side with an open-pored foam rubber layer 10, which has a thickness of 1 cm, for example. The shell body 3 is totally rigid toward bending, so that the unevenness of the body is accommodated by the layer 10. The foam layer bears, on its bottom side, a foil with an adhesive layer 10, which is protected, prior to application of the spacer covering, by a cover foil (not represented).

In the embodiment shown in Figures 6 and 7, the shell body 3 is provided with a plurality of parallel incisions 12, which extend through the outwardly arched region 3^b, but not through the edge region 3^a. The incisions 12 afford the shell body flexibility in the direction perpendicular to the incisions, so that the shell body can lie on a strongly curved surface of the body – for example, on an arm in the circumferential direction – even though the shell material itself is relatively rigid. This embodiment dispenses with a window, because the links between the incisions can be bent sufficiently far apart that a wound on the body surface is accessible.

Claims

1. A spacer covering for the contact-free protection of wounds, characterized by an at least partially dimensionally stable shell body (3) that is outwardly arched from the wound (2) on one side and is constructed in the edge region (3^a) for level support on the body surface (1).
2. The spacer covering according to claim 1, further characterized in that at least one opening (4) is constructed in the shell body (3).
3. The spacer covering according to claim 2, further characterized in that the at least one opening (4) is provided with a cover (3^d), which can be linked to the shell body (3).
4. The spacer covering according to claim 1, further characterized in that the shell body (3) is at least partially porous.
5. The spacer covering according to one of claims 1 to 4, further characterized in that the shell body (3) is constructed in a dimensionally stable manner in the central, outwardly arched region (3^b) and in a flexible manner in the edge region (3^a) intended for support on the body surface (1).
6. The spacer covering according to one of claims 1 to 5, further characterized in that the shell body (3) bears an adhesive layer (8) covered with a peelable protective foil in the edge region (3^a) on the side provided for support on the body surface (1).

7. The spacer covering according to one of claims 1 to 6, further characterized in that the shell body (3) consists of plastic.
8. The spacer covering according to claim 7, further characterized in that the shell body (3) is transparent.
9. The spacer covering according to one of claims 1 to 8, further characterized in that the shell body (3), in particular its cover (3^d), bears a repository material (7) that is held on the inner side at a distance from the wound (2).
10. The spacer covering according to one of claims 1 to 4 and 7 to 9, further characterized in that the shell body (3), inclusive of its edge region (3^a), is dimensionally stable and the edge region (3^a) is provided with a soft layer (10) on the side facing the body surface (1).
11. The spacer covering according to claim 10, further characterized in that the layer (10) is formed from foam rubber, hollow rubber profile, or nonwoven material.
12. The spacer covering according to claim 10 or 11, further characterized in that the layer (10) bears a foil (11) covered with a peelable protective foil with adhesive layer on the side intended for support on the body surface (1).
13. The spacer covering according to one of claims 1, 2 or 6 to 12, further characterized in that one or several parallel incision(s) or predetermined tearing point(s) are formed in the shell body (3) outside of the edge region (3^a).
14. The spacer covering according to claim 13 or 14, further characterized in that, for an oblong shell body (3), the incisions or predetermined tearing points (12) are situated transversely to its lengthwise axis.



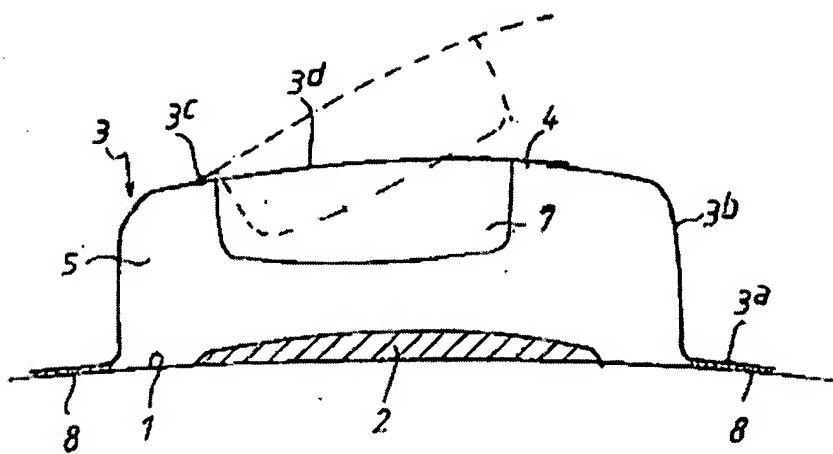


FIG. 3

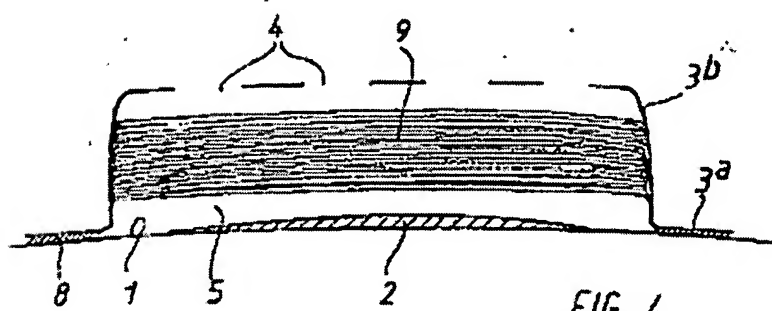


FIG. 4

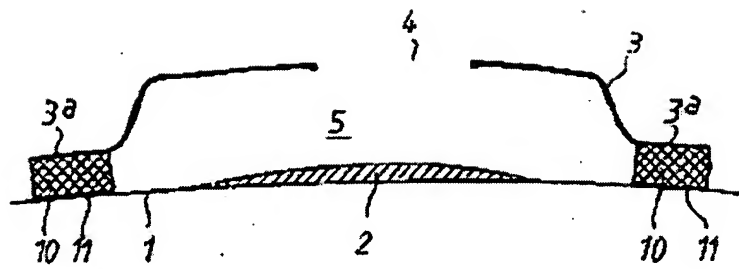


FIG. 5

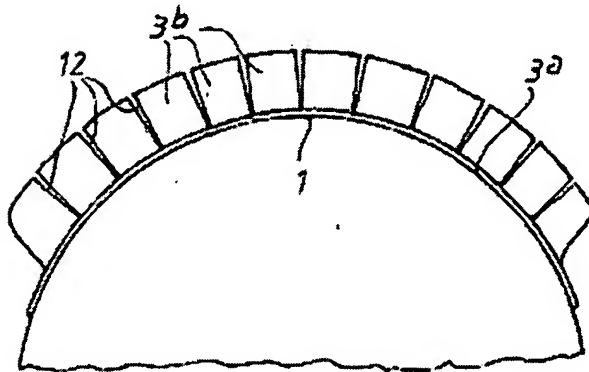


FIG. 6

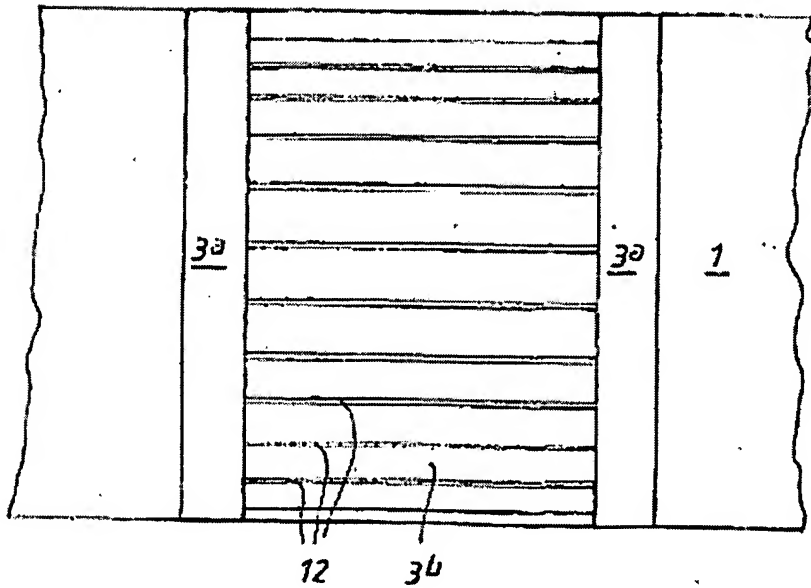


FIG. 7